

Abstract Submitted  
for the GEC15 Meeting of  
The American Physical Society

**PLASIMO modelling of a helium atmospheric plasma jet** DIANA MIHAILOVA, ANA SOBOTA, JAN VAN DIJK, Eindhoven University of Technology — Atmospheric plasma jets are intensively studied because of their wide range of potential applications, in particular for surface treatments and in plasma medicine. The PLASIMO modeling toolkit is used to simulate the capillary plasma-jet in order to quantify the delivery of fluxes and fields to the treated sample. The setup under study consists of capillary powered electrode through which helium gas flows and a grounded ring electrode placed a distance of few mm in front of the capillary. The discharge is excited by sinusoidal voltage with amplitude of 2kV and 30KHz repetition rate. The plume emanating from the jet, or the plasma bullets, propagates through a Pyrex tube and the gas phase channel of helium exits into the surrounding air. The drift-diffusion module of PLASIMO is used to construct a model of the helium plasma jet with the aim to study the dynamics of the plasma inside and outside the source. We discuss the properties of the plasma source and the plasma plume or bullet emitted into the atmosphere. The modeling results are qualitatively compared with experimental observations.

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Date submitted: 19 Jun 2015

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